

EXHIBIT 4

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

WSOU INVESTMENTS LLC D/B/A	§
BRAZOS LICENSING AND	§ C.A. NO. 6:20-cv-00487-ADA
DEVELOPMENT,	§ C.A. NO. 6:20-cv-00488-ADA
<i>Plaintiff,</i>	§ C.A. NO. 6:20-cv-00489-ADA
v.	§ C.A. NO. 6:20-cv-00490-ADA
ZTE CORPORATION, ZTE (USA) INC.	§ C.A. NO. 6:20-cv-00491-ADA
AND ZTE (TX), INC.,	§ C.A. NO. 6:20-cv-00492-ADA
<i>Defendants.</i>	§ C.A. NO. 6:20-cv-00493-ADA
	§ C.A. NO. 6:20-cv-00494-ADA
	§ C.A. NO. 6:20-cv-00495-ADA
	§ C.A. NO. 6:20-cv-00496-ADA
	§ C.A. NO. 6:20-cv-00497-ADA
	§

DEFENDANTS' NARROWED CLAIM TERMS AND CONSTRUCTIONS

Pursuant to the Court’s First Amended Scheduling Order (Dkt. No. 45),¹ Defendants ZTE Corporation, ZTE (USA) Inc., and ZTE (TX), Inc. (collectively “ZTE”) hereby serves its narrowed claim terms and claim constructions to WSOU Investments LLC D/B/A Brazos Licensing and Development (“WSOU”) as to the Asserted Claims² of U.S. Patent No. 8,451,839 (the “‘839 Patent”), U.S. Patent No. 7,489,929 (the “‘929 Patent”), U.S. Patent No. 7,487,240 (the “‘240 Patent”), U.S. Patent No. 8,179,960 (the “‘960 Patent”), U.S. Patent No. 8,730,905 (the “‘905 Patent”), U.S. Patent No. 8,147,071 (the “‘071 Patent”), U.S. Patent No. 9,294,060 (the “‘060 Patent”), U.S. Patent No. 9,185,036 (the “‘036 Patent”), U.S. Patent No. 9,258,232 (the “‘232 Patent”), U.S. Patent No. 7,742,534 (the “‘534 Patent”), and U.S. Patent No. 7,203,505 (the “‘505 Patent”) (collectively, the “Asserted Patents”).

¹ There are 11 pending cases. Citations throughout refer to new WDTX Case Nos. -00487 through -00497, and specific citations reference to the docket for WDTX Case No. -00487.

² The “Asserted Claims” as identified by WSOU in its November 3, 2020 Disclosures of Preliminary Infringement Contentions.

Defendants propose the following narrowed claim term constructions³ for the Asserted Claims of the Asserted Patents. Defendants also incorporate by reference all claim terms / limitations identified in their invalidity contentions as being indefinite under indefinite under 35 U.S.C. § 112 ¶ 2 (*see* Invalidity Contentions, Section IX.B as served on January 6, 2021), and as lacking enablement and written support under indefinite under 35 U.S.C. § 112 ¶ 1 (*see* Invalidity Contentions, Section IX.A as served on January 6, 2021).

Defendants expressly reserve the right to supplement, amend, or otherwise modify their list of terms in any way permitted by the Federal Rules of Civil Procedure and this Court's Local Rules and Patent Rules, or in response to Plaintiff WSOU's identification of terms and elements. Defendants provide this disclosure based upon information reasonably known and available to Defendants at this time. To the extent that WSOU shows good cause and is permitted to amend or supplement its infringement contentions in the future, or otherwise changes or further clarifies the positions it has taken in this case (including to add or to change in any way the claim(s) currently asserted, or to modify its apparent interpretation of the scope of the claim(s)), Defendants reserve the right to respond.

³ Defendants reserve the remaining terms and maintains that they are indefinite, lack support, and/or are invalid under 35 U.S.C. §§ 112(a), (b), and (f).

Means-Plus-Function Terms			
Asserted Claim	Claim Term	Preliminary Proposed Construction	Extrinsic Evidence Support
'505 Claim 14	"a formatter to format the received data into at least one SMS (Short Message Service) message"	Governed by 35 U.S.C. § 112(f) Function: formatting the received data into at least one SMS (Short Message Service) message Indefinite under 35 U.S.C. § 112(b); specification fails to describe it Structure: none disclosed	None.
'534 Claim 6	"means for selecting a set of sub-carriers from the plurality of sub-carriers on which user data is to be communicated from a transmitter to a receiver, said selecting based at least in part on at least one of sub-carrier quality levels and a threshold indication associated with sub-carriers, said quality levels communicated from the receiver to the transmitter and said threshold indication communicated from the transmitter to the receiver;"	Governed by 35 U.S.C. § 112(f) Function: selecting a set of sub-carriers from the plurality of sub-carriers on which user data is to be communicated from a transmitter to a receiver Indefinite under 35 U.S.C. § 112(b) Structure: none disclosed	None.
'534 Claims 1, 6, 13	"means for selecting said set of sub-carriers on which said user data is to be [received from said transmitter] / [transmitted to said receiver]"	Governed by 35 U.S.C. § 112(f) Function: selecting the set of sub-carriers on which the user data is to be received from the transmitter Indefinite under 35 U.S.C. § 112(b) Structure: none disclosed	None.

'534 Claims 1, 6	"means for determining quality levels for sub-carriers"	Governed by 35 U.S.C. § 112(f) Function: determining quality levels for sub-carriers Indefinite under 35 U.S.C. § 112(b) Structure: none disclosed	None.
'534 Claim 6	"means for receiving and storing said threshold indication from said transmitter, said threshold indication and said quality levels enabling said receiver to deduce said set of sub-carriers on which said user data is to be received"	Governed by 35 U.S.C. § 112(f) Function: receiving and storing the threshold indication from the transmitter, the threshold indication and the quality levels enabling the receiver to deduce the set of sub-carriers on which the user data is to be received Indefinite under 35 U.S.C. § 112(b) Structure: none disclosed	None.
'232 Claim 14	"instructions for receiving, by a controller of the traffic flow control system, a backpressure signal, wherein the back pressure signal indicates a period of congestion"	Governed by 35 U.S.C. § 112(f) Function: receiving, by a controller of the traffic flow control system, a backpressure signal, wherein the back pressure signal indicates a period of congestion Indefinite under 35 U.S.C. § 112(b) Structure: none disclosed	None.
'232 Claims 1, 14	"instructions for execution by a traffic flow control system for performing flow control on a flow of data packets for transmission over a link"	Governed by 35 U.S.C. § 112(f) Function: execution by a traffic flow control system for performing flow control on a flow of data packets for transmission over a link Indefinite under 35 U.S.C. § 112(b); Structure: none disclosed	None.

'036 Claims 1, 12, 23, 24	"congestion condition to enable thereby the control of at least one data flow in a manner tending to reduce the congestion condition"	Governed by 35 U.S.C. § 112(f) Function: enable thereby the control of at least one data flow in a manner tending to reduce the congestion condition Indefinite under 35 U.S.C. § 112(b) Lacks Written description under 35 U.S.C. § 112(a); Structure: none disclosed	None.
'240 Claims 1	"connectivity verification server to perform unattended connectivity verification jobs"	Governed by 35 U.S.C. § 112(f) Function: perform unattended connectivity verification jobs Indefinite under 35 U.S.C. § 112(b) Alternative structure: Managed Object Server as set forth in the specification at 7:49-58.	None.
'839 Claim 6	"a first obtainer configured to obtain route-related information and a predefined using time from said access response message, said predefined using time indicating the using time of said route"	Governed by 35 U.S.C. § 112(f) Function: obtain route-related information and a predefined using time from said access response message, said predefined using time indicating the using time of said route Indefinite under 35 U.S.C. § 112(b) Structure: none disclosed	None.
'839 Claim 6	"a route maintainer configured to update a route table based on said	Governed by 35 U.S.C. § 112(f)	None.

	route-related information and said predefined using time”	Function: update a route table based on said route-related information and said predefined using time Indefinite under 35 U.S.C. § 112(b) Structure: none disclosed	
'839 Claim 8	“a first judger configured to judge whether the route table item corresponding to said route-related information exists in said route table”	Governed by 35 U.S.C. § 112(f) Function: judge whether the route table item corresponding to said route-related information exists in said route table Indefinite under 35 U.S.C. § 112(b) Structure: none disclosed	None.
'839 Claim 8	“a creator configured to create the route table item corresponding to said route-related information if the first judger judges that no route table item corresponding to said route-related information exists in said route table”	Governed by 35 U.S.C. § 112(f) Function: create the route table item corresponding to said route-related information if the first judger judges that no route table item corresponding to said route-related information exists in said route table Indefinite under 35 U.S.C. § 112(b) Structure: none disclosed	None.
'071 Claim 1	“a processor for providing image data signalling to a projector, the image data signalling representing an image to be projected by the projector”	Governed by 35 U.S.C. § 112(f) Function: providing image data signalling to a projector, the image data signalling representing an image to be projected by the projector Structure: an integrated circuit chip customized for a particular use as set forth in the specification at 4:37-39.	None.
'071 Claim 14	“computer program code configured to, when executed by one or more	Governed by 35 U.S.C. § 112(f)	None.

	<p>processors, cause an apparatus to perform at least: receiving movement signalling associated with movement of a projector; and providing image data signalling to the projector based on received movement signalling, wherein the movement signalling provides an indication of one or more movement criterion of the projector, the movement criterion representing one or more of displacement and movement speed of the projector, and wherein the processor is configured to discriminate a movement criterion and to provide associated image data signalling to project associated image data.”</p>	<p>Function: executing computer program code configured to cause an apparatus to perform (1) receiving movement signalling associated with movement of a projector; and (2) providing image data signalling to the projector based on received movement signalling, wherein the movement signalling provides an indication of one or more movement criterion of the projector, the movement criterion representing one or more of displacement and movement speed of the projector, and wherein the processor is configured to discriminate a movement criterion and to provide associated image data signalling to project associated image data</p> <p>Indefinite under 35 U.S.C. § 112(b) Structure: None disclosed</p>	
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Other Terms			
Asserted Claim	Claim Term	Preliminary Proposed Construction	Extrinsic Evidence Support
'505 Claim 1	“data synchronization”	Bringing a data file of a source device and a data file of a target device to the same value.	Wiley-IEEE Hargrave’s communications dictionary
'505 Claims 1, 23	“formatting”	Indefinite under 35 U.S.C. § 112(b) Lack of Written description under 35 U.S.C. § 112(a)	Wiley-IEEE Electrical and Electronics Engineering Dictionary

'505 Claim 14	“formatter to format”	Indefinite under 35 U.S.C. § 112(b) Lack of Written description under 35 U.S.C. § 112(a)	
'505 Claim 14	“data message receiver”	Indefinite under 35 U.S.C. § 112(b) Lack of Written description under 35 U.S.C. § 112(a)	
'505 Claims 1, 14, 23	“SMS (Short Message Service)”	Cellular based messages of limited size consisting of text and numbers.	Wiley-IEEE Hargrave’s communications dictionary (with minor modification)
'505 Claims 1, 14, 23	“remotely located terminal device”	A device that is unable to connect via local area network to a host device.	Wiley-IEEE Electrical and Electronics Engineering Dictionary (with minor modification)
'505 Claims 1, 23	“short-range connection”	A connection between terminal devices using infrared or Bluetooth connection	
'534 Claims 4, 7	“maximal number of sub-carriers”	Indefinite under 35 U.S.C. § 112(b)	
'534 Claims 1, 2, 16	“as a function of said indication and of said quality levels”	Arranging the sub-carriers in quality level decreasing order and to select the sub-carriers starting with the sub-carrier having the highest quality level and continuing to select the sub-carriers with decreasing quality level until the indication related to a threshold is reached.	
'534 Claim 5	“calculated at said receiver”	Determining at a terminal a quality level for the sub-carriers of a multi carrier system.	
'534 Claims 1, 2, 3, 5, 6,	“quality level”	One of a signal-to-interference ratio, a bit error rate, or a modulation scheme.	

7, 8, 9, 13, 16, and 17			
'929 Claims 1, 3, 8, 10, and 15	"handoff" / "determining if a handoff is desired"	Connection to mobile device is handed-over from base station to another base station without breaking the connection.	Wiley-IEEE Hargrave's communications dictionary
'929 Claims 1, 2, 3, 4, 6, 9, 11, and 13	"link" / "establishing a new link" / "existing link" / "initiating a new link" / "releasing the existing link"	A communication link between a base station and a mobile station, the communication link including one or more communication channels.	
'929 Claim 1	"achieving uplink synchronization"	Matching a mobile station's clock and data timing to the same clock and data timing of a base station.	Wiley-IEEE Hargrave's communications dictionary (with minor modification)
'929 Claim 1	"processed the transmitted active set update message"	Updating the active set to replace an existing communication link with a new communication link.	
'929 Claim 8	"measurement reports"	Values reported from a mobile station that contain information about channel quality. Measurement reports assist the network in making handover and power control decisions.	E1968A , E6701H , E6704A , GSM/GPRS/EGPRS User's Guide (keysight.com)
'929 Claim 11	"buffering bearer traffic"	During a handoff process, all data from the mobile station is buffered at the mobile station or all data at the network side is buffered at the network side until the handoff process is complete.	
'929 Claim 14	"characteristic"	Indefinite under 35 U.S.C. § 112(b)	
'929 Claim 14	"replacement hysteresis"	Indefinite under 35 U.S.C. § 112(b)	Optimal Timer Settings For The Soft Handover

			Algorithm in WCDMA Request PDF (researchgate.net) 3GPP, ETSI TR 125 922 v3.2.0 (2000-06)
'232 Claims 1, 14	“flow control”	Regulate movement of a series of data packets	Wiley Electrical and Electronics Engineering Dictionary
'232 Claims 1, 14	“transmission over a link”	Indefinite under § 112(b)	
'232 Claims 1, 14	“backpressure signal”	Lacks written description under 35 U.S.C. § 112(a)	
'232 Claims 1, 14	“period of congestion”	Lack of written description under 35 U.S.C. § 112(a)	
'232 Claims 1, 14	“rate limiting”	Lack of written description under 35 U.S.C. § 112(a).	
'232 Claims 1, 14	“content of the backpressure signal”	Lack of written description under 35 U.S.C. § 112(a)	
'036 Claims 1, 6-10, 12, 17-21, 23, 24	“data flow” / “to enable thereby the control of at least one data flow” / “data flow is controlled” / “a data flow” / “the data flow”	Indefinite under 35 U.S.C. § 112(b)	

'036 Claims 1, 3, 12, 14, 23, 24	“network” / “network node in the network” / “network node” / “one or more network nodes upstream of the congestion condition”	Indefinite under 35 U.S.C. § 112(b).	
'036 Claims 1, 12, 23, 24	“congestion condition” / “indication that a congestion condition exists”	Indefinite under 35 U.S.C. § 112(b).	
'036 Claims 1, 12, 23, 24	“in a manner tending to reduce the congestion condition” / “the congestion may be reduced”	Indefinite under 35 U.S.C. § 112(b)	
'036 Claims 2, 4, 13, 15	“queue” / “queue maximum occupancy is exceeded” / “queue maximum occupancy”	Indefinite under 35 U.S.C. § 112(b), and/or lacks written description under 112(a).	
'036 Claims 7, 8, 9, 18, 19, 20	“those packets associated with the destination address” / “those packets associated with only the destination address” / “those packets associated with the source and destination addresses”	Indefinite under 35 U.S.C. § 112(b)	
'036 Claims 1, 12, 23, 24	“end-node associated with the congestion condition”	Written description/enablement under 35 U.S.C. § 112(a)	
'240 Claims 1, 6, 13	“verifying connectivity in the network relating to at least Layer-2 and Layer-3 objects”	Indefinite under 35 U.S.C. § 112(b)	
'240 Claims 1, 6, 13	“a given containment hierarchy”	Indefinite under 35 U.S.C. § 112(b)	

'240 Claims 1, 6, 13	"the comparison shows that at least one of the connectivity verification results has reached the specified connectivity verification threshold"	Lack of written description under 35 U.S.C. § 112(a)	
'240 Claims 1, 6, 13	"the containment hierarchy affected by the connectivity verification result"	Lack of written description/enablement under 35 U.S.C. § 112(a)	
'240 Claims 1, 6, 13	"define a connectivity verification job" / "defining a connectivity verification job"	Specifying connectivity verification parameters including the type and the number of connectivity verification tests to be performed	
'240 Claims 1, 6, 13	"the connectivity verification result[s] associated with the alarm"	Indefinite under 35 U.S.C. § 112(b)	
'240 Claims 1, 6, 10, 13	"user-input specification"	Lack of written description / enablement under 35 U.S.C. § 112(a)	
'839 Claims 1, 3, 6, 8, 11	"route" / "route-related information"	Indefinite under 35 U.S.C. § 112(b).	
'839 Claims 1, 6, 11	"using time"	Claim 6: Indefinite for lack of antecedent basis under 35 U.S.C. § 112(b). "lease time"	
'839 Claims 1, 6	"said predefined using time indicates[ing] a [the] using time of said route"	Indefinite under 35 U.S.C. § 112(b).	
'060 Claims 1 and 10	"frequency domain component feature of the feature vector"	A group of a plurality of energy levels of the audio signal, wherein each of the plurality energy levels corresponds to the energy of an overlapping band of the audio signal; a value representing a centroid of	

		the frequency domain spectrum of the audio signal; and a value representing the degree of flatness of the frequency domain spectrum.	
'060 Claims 1 and 10	"extracting a feature vector"	Indefinite under 35 U.S.C. § 112(b)	
'060 Claims 1 and 10	"time domain component feature of the feature vector"	A gradient index based on the sum of the gradient at points in the audio signal which result in a change in direction of the waveform of the audio signal; a ratio of the energy of a frame of the audio signal to the energy of a previous frame of the audio signal; and a voice activity detector indicating whether a frame of the audio signal is classified as active or inactive.	
'060 Claims 1 and 10	"the level value is attenuated"	Indefinite under 35 U.S.C. § 112(b)	
'060 Claims 1 and 10	"approaches an estimate"	Indefinite under 35 U.S.C. § 112(b)	
'060 Claims 1 and 10	"spectral shape parameter"	A sub band energy level value or a sub band gain factor based on the sub band energy level value.	
'905 Claims 1, 6, 12, 18, 25, and 26	"transmission opportunity"	The interval of time when a particular station is permitted to initiate transmissions onto the wireless medium.	IEEE Std 802.11-2016 (Revision of IEEE Std 802.11-2012) Wireless Communication Standards: A Study of IEEE 802.11, 802.15, 802.16, p.356. Publisher: Wiley-IEEE

			Standards Association
'905 Claims 1, 6, 12, 18, 25, and 26	"transmission period"	The period of the transmission opportunity.	
'905 Claims 1, 12, 25	"determined transmission time interval"	The interval of the transmission opportunity.	
'905 Claims 5, 15	"during a time interval between data transmission intervals during the transmission period"	Indefinite under 35 U.S.C. § 112(b)	
'905 Claims 1, 12, 25	"determining to utilize a bandwidth greater than that of the first frequency band during the transmission period"	Indefinite under 35 U.S.C. § 112(b)	
'905 Claims 5, 16	"at least one frequency channel indicator"	Indefinite under 35 U.S.C. § 112(b)	
'905 Claims 9, 21	"causing the transmission of the reservation message on each frequency band separately"	Indefinite under 35 U.S.C. § 112(b)	
'905 Claims 11, 23	"timing and transmission frequency"	Indefinite under 35 U.S.C. § 112(b)	
'960 Claims 1, 2, 3, 9, 10, 15, 16, 17, 23, and 24	"virtual reference"	A group of pixels used as reference material for encoding portions of the video signal, but that does not comprise or represent any portion of the actual video sequence to be displayed.	
'960 Claims 1, 9, 15, 23	"an original video signal"	A video signal that includes a sequence of video frames and is to be encoded.	

'960 Claims 1, 9, 15, 23	“video frames”	A sequence of frames.	Wiley-IEEE Electrical and Electronics Engineering Dictionary
'960 Claims 1, 9, 15, 23	“subsequent video display”	Generating an encoded video signal from an original video signal, the encoded video signal for use in subsequent video display of the original video signal.	
'960 Claims 1, 9, 15, 23	“does not represent any portion of any individual frame of the original video signal”	Data generated based on a portion of a video signal but not to be displayed with the video signal.	
'960 Claims 1, 15	“incorporating” / “incorporating said encoded virtual reference data” / “incorporating into the encoded video signal an indication” / “incorporating said encoded portions of said original video signal”	Forming an encoded dual block by including a block of encoded original video signal and a block of encoded virtual reference data	
'960 Claims 3, 17	“minimize differences”	Indefinite under 35 U.S.C. § 112(b)	
'071 Claims 1, 9, 13, 14	“movement signalling” / “receiv[ing] movement signalling associated with the movement of the projector” / “corresponding movement signalling”	Indefinite under 35 U.S.C. § 112(b)	
'071 Claim 9	“a movement sensor configured to detect movement of the apparatus and/or a projector”	Indefinite under 35 U.S.C. § 112(b)	
'071 Claims 1, 13, 14	“discriminate” / “discriminate a movement criterion” / “the processor	Indefinite under 35 U.S.C. § 112(b)	

	is configured to discriminate a movement criterion”		
'071 Claims 1, 13, 14	“provide associated image data signalling to project associated image data”	Indefinite under 35 U.S.C. § 112(b)	
'071 Claims 1, 9, 13, 14	“the processor” / “wherein the processor is configured”	Indefinite under 35 U.S.C. § 112(b)	

DATED: February 26, 2021

Respectfully submitted,

/s/Lionel M. Lavenue

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CERTIFICATE OF SERVICE

I hereby certify that all counsel of record, who are deemed to have consented to electronic service, are being served on February 26, 2021 with a copy of this document via email.

/s/Lionel M. Lavenue

Lionel M. Lavenue